dinoflagellate. Similar training has been provided for staff at the National Marine Fisheries Service (NMFS), Beaufort, North Carolina, the State of Maryland Department of Natural Resources, the phytoplankton consultant for the State of Virginia, and the State of Delaware Department of Natural Resources. We have enlisted the help of Drs. P. Tester and C. Guo (NMFS - Beaufort) in monitoring the seasonal abundance of amoeboid and flagellated forms in the water column and sediments of selected areas where the dinoflagellate repeatedly has caused "sudden death" fish kills.

C. Bioassays to Screen for Toxic Activity

In checking water samples from fish kills for the presence of *Pfiesteria piscimorte* (nov.gen., nov.sp.), we developed a sensitive detection methodology to discern this small, nondescript alga in its dinospore stage from other co-occurring, nontoxic estuarine dinoflagellates that are similar in appearance. This task is also ongoing. We verify the presence of the most toxic forms of the dinoflagellate by conducting aquarium bioassays in which a standard test species, tilapia (*Oreochromis mossambica* Peters) is exposed to the field water samples. The tilapia selected as our standard assay species is not endemic but, nonetheless, is susceptible to the dinoflagellate's toxin. It offers the advantages of constant availability, wide salinity tolerance, and certainty of no prior contamination by local populations of the alga. We check for increasing abundance of toxic stages using the Utermöhl technique as in Burkholder & Wetzel (1989). Dinoflagellate species identifications are confirmed using scanning electron microscopy.

In earlier work we determined that the aerosol accumulations from concentrated aquarium cultures induce disorientation, mild halucinatory effects, nausea, vomiting, eye irritation/swelling, severe asthmatic signs, and short-term memory loss (e.g., Huyghe 1993; Burkholder & Glasgow unpubl. data). Hence, pending toxin identification, the dinoflagellate has been classified as a high level-2 biohazard (NCSU Biosafety Committee), and all research summarized in this report was completed in well-aerated quarantined facilities. As standard operating procedure, we routinely used respirators, disposable gloves, disposable boots, and clothing that was removed and treated with dilute bleach (0.05%) after use. To prevent contamination of control aquaria without dinoflagellates, each aquarium was isolated from all others using shelving with air-tight compartments constructed of clear plexiglass. Cross-contamination also was prevented by using disposable gloves, tubes and pipets to sample each culture. To clean and de-contaminate